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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/996,713	11/30/2001	Cha-Bong Choi	P-0289	3691

34610 7590 05/10/2004

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EXAMINER

CZEKAJ, DAVID J

ART UNIT PAPER NUMBER

2613

DATE MAILED: 05/10/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

5

Office Action Summary

Applicant No.

09/996,713

Applicant(s)

CHOI, CHA-BONG

Examiner

Dave Czekaj

Art Unit

2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Response to Arguments

On pages 12-15, the applicant argues that the combination of Irube and Rossi is improper. The applicant further argues that the combination of Irube and Rossi does not provide any motivation for a combination and requires the impermissible use of hindsight in view of the applicant's own disclosure. While the applicant's points are understood, the examiner cannot agree. See for example Rossi, column 1, lines 17-48. There, Rossi discloses that there is a need to know the exact location of crisis situations. Rossi uses examples of the Northridge California earthquakes, high speed police chases, and confusing footage of the Malibu fires with the Laguna Beach fires, to show one common problem: an exact location was not known in each situation. Therefore, Rossi discloses a motivation to combine in order to determine the exact location of an object. Therefore, the rejection has been maintained.

On pages 15-16, the applicant argues that all of the references fail to disclose demultiplexing an image frame into image, voice, and compass orientation direction data. The applicant further argues that all of the references fail to disclose displaying image data direction of a terminal including formatting a detected analogue compass orientation direction into a binary value. While the applicant's points are understood, the examiner cannot agree. See for example Irube, figure 1 and paragraphs 0042 and 0047. There, Irube discloses demultiplexing data into its video and voice parts. The Rossi reference would supply the compass orientation direction to the demultiplexer had the Irube and Rossi reference been combined. Further, the Rossi reference discloses

in column 3, lines 32-46, taking the signals and converting them into a binary value by way of a digital quartz inertial measurement unit, wherein the digital value produced by the digital quartz inertial measurement unit represents the binary value. Therefore, the rejections have been maintained.

The amendments to claims 10, 12-13, and 18 have changed the scope of the previously rejected claims 10, 12-13, and 18 and have therefore been re-examined.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 6-8, 19, and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Irube et al. (2001/0041586), (hereinafter referred to as "Irube") in view of Rossi et al. (5672820), (hereinafter referred to as "Rossi").

Regarding claims 1 and 19, Irube discloses a communication terminal apparatus combined with a handset with high probability (Irube: paragraph 0001, lines 1-3). This apparatus comprises a "codec for performing converting operation between analogue voice data and digital voice data" (Irube: figure 1, item 23, wherein the voice codec is the codec), "camera module for performing converting operation between analogue image data and digital image data" (Irube: figure 1, items 4 and 25), "voice/image communication apparatus for multiplexing or demultiplexing the converted voice, image, direction data, and

frame" (Irupe: figure 1, items 17 and 20, wherein the multiplexer/demultiplexer are part of the communication apparatus, paragraph 0113, lines 1-4, wherein the frame is a combination of the voice, video, and direction or other data), "LCD module for displaying image and direction data" (Irupe: figure 1, items 14, 16, and 28, wherein the camera direction sensor unit provides the direction data and the video encoder provides the image data), and a "control unit for controlling each unit generally" (Irupe: figure 1, item 11). Although Irupe fails to show a direction sensor for detecting the compass orientation direction of a photographing object as disclosed, Irupe does show a camera direction sensor unit (Irupe: figure 1, item 28) for detecting the presence of the camera (Irupe: paragraph 0047, lines 18-19). Rossi teaches that angles, compass headings (or compass orientation), and GPS coordinates, along with a camera, can be used to determine the objects location or direction (Rossi: column 4, lines 1-36). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to implement the camera direction sensor unit disclosed by Irupe with the angle, compass, and GPS coordinates taught by Rossi in order to obtain an apparatus that more precisely locates the direction of an object. Further, one would be motivated to do so since Irupe is silent as to how the object location is determined.

Regarding claim 2, Rossi discloses "the direction sensor detects a compass orientation direction of a photographing object, which is identical with a photographing direction of the camera" (Rossi: figure 2, wherein the direction

sensor is the unit (50), the camera is the pointing device (52) which determines the direction of the object using GPS, angles, and a compass sensor, and the compass orientation direction is given by the compass heading (66)).

Regarding claim 3, see the examiners comments for claim 1 and note that in the combination of Irube and Rossi as applied to claim 1, Irube discloses a "voice encoding processing unit for encoding the voice data input from the codec or converting the voice data into data for transmitting to a speaker" (Irube: figure 1, items 23 and 27, wherein the video encoder receives and encodes the voice data from the voice codec, item 2, wherein the voice data is transmitted to the handset, which contains a speaker), "image encoding processing unit for encoding the image data" (Irube: figure 1, item 27, wherein the image encoder is the video encoder), and "multiplexing unit for multiplexing the voice, image, and direction data" (Irube: figure 1, items 17 and 20). Rossi discloses "encoding the direction data" (Rossi: figure 5, item 30, wherein the direction data is obtained from the angular measuring system and the receiving module).

Regarding claims 4 and 21, Rossi discloses "calculating the compass orientation direction and encodes calculated compass orientation direction by formatting the orientation direction into a binary value" (Rossi: column 4, lines 20-36, wherein the angle is composed of the three angles α , β , and γ , figure 2, item 30, wherein the encoder encodes the angle and direction data, column 3, lines 32-46, wherein the digital value produced by the digital quartz inertial

measurement unit represents the binary value, figure 3, item 66, wherein the compass heading is the compass orientation direction).

Regarding claims 6, Rossi discloses "displaying a direction on the screen" (Rossi: figure 5, item 48, wherein the display displays the direction).

Regarding claims 7, although not shown, it would have been obvious to display the direction on the screen in the form of a compass (Official Notice). Doing so would have been obvious to make the direction easier to view and read.

Regarding claims 8 and 20, see the examiners comments for claim 1 and note that in the combination of Irube and Rossi as applied to claim 1, Irube discloses that the "multiplexing unit multiplexes the encoded packet data and compass orientation direction data by receiving data from the voice, image, and direction units and inputs the data to the image frame by forming a flag and header" (Irube: figure 1, items 27, 28, 23, 17, and 20, wherein the multiplexer multiplexes data from the video encoder, voice codec, and camera direction unit, figure 12 and paragraph 0039, line 7, wherein the voice/video conversation appears to be in the flag/header format which would comply with the MPEG 4 standards disclosed by Irube. Had Irube and Rossi been combined as disclosed above, Rossi would supply the compass orientation data to be multiplexed, wherein the compass orientation data is the compass heading).

Regarding claim 22, Rossi discloses that the "direction data are formatted to display one byte of information" (Rossi: figure 2, wherein the direction and angle data are formatted to fit in the map and are then displayed).

3. Claims 9 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Irube et al. (2001/0041586), (hereinafter referred to as "Irube") in view of Rossi et al. (5672820), (hereinafter referred to as "Rossi") in further view of Takahashi et al. (6516094), (hereinafter referred to as "Takahashi").

Regarding claims 9 and 23, Irube discloses a communication terminal apparatus combined with a handset with high probability (Irube: paragraph 0001, lines 1-3). This apparatus comprises a "codec for performing converting operation between analogue voice data and digital voice data" (Irube: figure 1, item 23, wherein the voice codec is the codec), "camera module for performing converting operation between analogue image data and digital image data" (Irube: figure 1, items 4 and 25), "voice/image communication apparatus for multiplexing or demultiplexing the converted voice, image, direction data, and frame" (Irube: figure 1, items 17 and 20, wherein the multiplexer/demultiplexer are part of the communication apparatus, paragraph 0113, lines 1-4, wherein the frame is a combination of the voice, video, and direction or other data), "LCD module for displaying image and direction data" (Irube: figure 1, items 14, 16, and 28, wherein the camera direction sensor unit provides the direction data and the video encoder provides the image data), and a "control unit for controlling each unit generally" (Irube: figure 1, item 11). Although Irube fails to show a direction sensor for detecting the direction of a photographing object and the formation of null data as disclosed, Irube does show a camera direction sensor unit (Irube: figure 1, item 28) for detecting the presence of the camera (Irube:

paragraph 0047, lines 18-19). Rossi teaches that angles, compass headings, and GPS coordinates, along with a camera, can be used to determine the objects location or direction (Rossi: column 4, lines 1-36). Takahashi teaches that when a reference region is not described, i.e. no information/data is contained on the reference region to transmit, null data is formed and inserted into the description region (Takahashi: figure 5d, column 6, lines 55-61). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to implement the camera direction sensor unit disclosed by Irube with the angle, compass, and GPS coordinates taught by Rossi, and add the formation of null data taught by Takahashi in order to obtain an apparatus that more precisely locates the direction of an object. Further, one would be motivated to do so since Irube is silent as to how the object location is determined.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Irube et al. (2001/0041586), (hereinafter referred to as "Irube") in view of Rossi et al. (5672820), (hereinafter referred to as "Rossi") in further view of Rudow et al. (6236940), (hereinafter referred to as "Rudow").

Regarding claim 5, Irube discloses a communication terminal apparatus combined with a handset with high probability (Irube: paragraph 0001, lines 1-3). This apparatus comprises a "codec for performing converting operation between analogue voice data and digital voice data" (Irube: figure 1, item 23, wherein the voice codec is the codec), "camera module for performing converting operation between analogue image data and digital image data" (Irube: figure 1, items 4

and 25), "voice/image communication apparatus for multiplexing or demultiplexing the converted voice, image, direction data, and frame" (Irupe: figure 1, items 17 and 20, wherein the multiplexer/demultiplexer are part of the communication apparatus, paragraph 0113, lines 1-4, wherein the frame is a combination of the voice, video, and direction or other data), "LCD module for displaying image and direction data" (Irupe: figure 1, items 14, 16, and 28, wherein the camera direction sensor unit provides the direction data and the video encoder provides the image data, column 4, lines 1-3), and a "control unit for controlling each unit generally" (Irupe: figure 1, item 11). Although Irupe fails to show a direction sensor for detecting the direction of a photographing object and having a displaying area on one side of the screen as disclosed, Irupe does show a camera direction sensor unit (Irupe: figure 1, item 28) for detecting the presence of the camera (Irupe: paragraph 0047, lines 18-19). Rossi teaches that angles, compass headings, and GPS coordinates, along with a camera, can be used to determine the objects location or direction (Rossi: column 4, lines 1-36). Rudow teaches that having the direction, or position, of a golfer on one side of the screen enables more information to be displayed elsewhere (Rudow: figure 12, column 61, lines 55-65, wherein having the golfers direction displayed in the corner of the screen enables the hole information to be displayed as well, as opposed to having the golfers position take up the entire screen). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to implement the camera direction sensor unit disclosed by

Irube with the angle, compass, and GPS coordinates taught by Rossi, and add the display means taught by Rudow in order to obtain an apparatus that more precisely locates and displays the direction of an object. Further, one would be motivated to do so since Irube is silent as to how the object location is determined.

5. Claims 10 and 12-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Irube et al. (2001/0041586), (hereinafter referred to as "Irube") in view of Rossi et al. (5672820), (hereinafter referred to as "Rossi") in further view of Rudow et al. (6236940), (hereinafter referred to as "Rudow") in further view of Berstis (6542824).

Regarding claims 10 and 12, see the examiners comments for claims 1 and 5 and note that in the combination of Irube, Rossi, and Rudow as applied to claims 1 and 5, Irube discloses "detecting the data demultiplexed image and direction data and transmitting to the displaying unit" (Irube: figure 1, paragraph 0113) and Rudow discloses "checking for a direction displaying mode" (Rudow: figure 6, wherein the list of menu choices on the right, i.e. 1-9, sets the hole to be displayed), "determining the position and method in displaying the direction and image data on the LCD if direction mode is set" (Rudow: figures 6 and 20, wherein the position is determined with the aid of GPS data, column 4, lines 1-3), and "displaying the direction and image on the LCD" (Rudow: figures 6 and 20). However, the combination of Irube, Rossi, and Rudow further lack displaying compass orientation direction on the LCD as claimed. Berstis teaches that GPS receivers are a cost prohibitive way of determining the position and time

information of an object (Berstis: column 1, lines 47-53). To overcome this problem, Berstis discloses an apparatus that determines and subsequently displays the compass orientation direction without using a GPS receiver (Berstis: column 1, lines 57-60, column 6, lines 57-61). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to take the apparatus disclosed by Irube, Rossi, and Rudow, and add the position determining and displaying taught by Berstis in order to obtain an apparatus that cost efficiently determines and displays position data by excluding the use of a GPS receiver.

Regarding claim 13, Rudow discloses "the LCD displays only image data read from the voice/image communication apparatus if the direction displaying mode is not set" (Rudow: figure 13, wherein the image communication apparatus is the box 18 which includes a video controller, column 10, lines 34-38, wherein pop up windows or other various messages are displayed on the screen, column 4, lines 1-3).

Regarding claim 14, Rudow discloses having "a direction displaying area at one side of the screen" (Rudow: figure 20, wherein the direction displaying area is the left/center of the screen which shows the direction of the hole).

Regarding claim 15, Rossi discloses "displaying a direction on the screen" (Rossi: figure 5, item 48, wherein the display displays the direction).

Regarding claims 16, although not shown, it would have been obvious to display the direction on the screen in the form of a compass (Official Notice). Doing so would have been obvious to make the direction easier to view and read.

Regarding claim 17, Irube discloses "displaying comprises a transmitted stop image" (Irube: figure 12, wherein the End Negotiation frame is the stop image).

Regarding claim 18, Rudow and Berstis disclose "the LCD further displays time and date information with the image and compass orientation data" (Rudow: figure 20, column 5, lines 62-64, wherein it is determined, from the GPS satellites, the dates of the games played, column 4, lines 1-3; Berstis: column 6, lines 57-61).

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Irube et al. (2001/0041586), (hereinafter referred to as "Irube") in view of Rossi et al. (5672820), (hereinafter referred to as "Rossi") in further view of Rudow et al. (6236940), (hereinafter referred to as "Rudow") in further view of Berstis (6542824) in further view of Takahashi et al. (6516094), (hereinafter referred to as "Takahashi").

Regarding claim 11, the combination of Irube, Rossi, Rudow, and Berstis as applied to claims 10 and 12 differ from claim 11 in that claim 11 further requires forming of null data as claimed. Takahashi teaches that when a reference region is not described, i.e. no information/data is contained in the reference region to transmit, null data is formed and inserted into the description region (Takahashi: figure 5d, column 6, lines 55-61). Therefore, it would have

been obvious to one having ordinary skill in the art at the time the invention was made to implement the camera direction sensor unit disclosed by Irube with the angle, compass, and GPS coordinates taught by Rossi, the displaying of the time and compass direction taught by Rudow and Berstis and add the formation of null data taught by Takahashi in order to obtain an apparatus that more precisely locates the direction of an object.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

US-5335072 08-1994 Tanaka et al.

US-6507371 01-2003 Hashimoto et al.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dave Czekaj whose telephone number is (703) 305-3418. The examiner can normally be reached on Monday - Friday 9 hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelley can be reached on (703) 305-4856. The fax phone number for the organization where this application or proceeding is assigned is (703) 872 9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.


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